

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT (PCT Article 36 and Rule 70)

REC'D 27 JAN 2006

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Applicant's or agent's file reference PU030240	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/PEA/416)	
International application No. PCT/US2004/001573	International filing date (<i>day/month/year</i>) 20.01.2004	Priority date (<i>day/month/year</i>) 13.08.2003
International Patent Classification (IPC) or both national classification and IPC H04N5/00		
Applicant THOMSON LICENSING S.A. ET AL.		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 6 sheets, including this cover sheet.

☐ This report is also accompanied by ANNEXES, i.e. sheets of the description, ^{CA}claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of sheets.

3. This report contains indications relating to the following items:

I ☒ Basis of the opinion

II ☐ Priority

III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability



IV ☐ Lack of unity of invention

V ☒ Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

VI ☐ Certain documents cited

VII ☐ Certain defects in the international application

VIII ☐ Certain observations on the international application

Date of submission of the demand 02.11.2004	Date of completion of this report 25.01.2006
Name and mailing address of the international preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized Officer Marzal-Abarca, X Telephone No. +49 89 2399-8061 

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EXAMINATION REPORT**

International application No. **PCT/US2004/001573**

I. Basis of the report

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17):*

Description, Pages

1-8 as originally filed

Claims, Numbers

1-19 as amended (together with any statement) under Art. 19 PCT

Drawings, Sheets

1/4-4/4 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
☐ the language of publication of the international application (under Rule 48.3(b)).
☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
☐ filed together with the international application in computer readable form.
☐ furnished subsequently to this Authority in written form.
☐ furnished subsequently to this Authority in computer readable form.
☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
☐ the claims, Nos.:
☐ the drawings, sheets:

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5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)).

(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)

6. Additional observations, if necessary:

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	
	No: Claims	1-19
Inventive step (IS)	Yes: Claims	
	No: Claims	1-19
Industrial applicability (IA)	Yes: Claims	1-19
	No: Claims	

2. Citations and explanations

see separate sheet

Re Item V.

1 The following documents are referred to in this communication:

D1 : US 5 594 492 A (LEW EUGENE L ET AL) 14 January 1997 (1997-01-14)

D2 : US 5 933 192 A (CROSBY JEFFREY W ET AL) 3 August 1999 (1999-08-03)

2 INDEPENDENT CLAIM 1

2.1 The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of claim 1 is not new in the sense of Article 33(2) PCT.

Document D1 discloses (the references in parenthesis applying to this document):

"A receiver comprising:

a tuning and a decoding unit for tuning and decoding a digital transmission to produce control words associated with respective channels included in the digital transmission (see D1, column 4, lines 27-39, column 7, lines 35-61, figure 4, element 420, figure 6, elements 610-665); and

a programmed means, responsive to a user's request to tune and decode a selected channel (see D1, column 4, lines 40-67, column 7, line 35- column 8, line 53, figure 4, elements 421-425, figure 6, elements 610-665, 670a, 670b, 681, figure 7) for using selected control words to generate a descrambling key for the selected channel to be outputted and descramble digital transport streams associated with the selected channel (see D1, column 4, line 48 - column 5, line 8, column 7, line 62 - column 8, line 17, figure 6, elements 681, 670a, 670b)

the tuning and decoding unit also monitoring a non selected channel to derive control words associated with the non selected channel and storing the control words in a memory (see D1, column 4, line 48 - column 5, line 8, column 5, lines 16-20 and 44-51, column 6, line 61 - column 7, line 35, column 7, lines 55-61, figure 4, element 426, figure 5, figure 6, elements 655, 666, 667) whereby the stored control words are used to decode digital transport streams when the non selected channel is subsequently selected by the user (see D1, column 4, line 48 - column 5, line 8, column 7, line 62 - column 8, line 17, figure 6, elements 681, 670a, 670b)."

3 INDEPENDENT CLAIM 6

3.1 The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of Claim 6 is not new in the sense of Article 33(2) PCT. The subject-matter of Claim 6, in the category of method, corresponds to the subject-matter of Claim 1, in the

category of device. Therefore same reasoning, mutatis mutandis, applies.

4 INDEPENDENT CLAIM 11

4.1 The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of claim 9 is not new in the sense of Article 33(2) PCT.

Document D2 discloses (the references in parenthesis applying to this document):

"a method of reception comprising the steps of:

determining a potential viewing channel in a digital transmission (see D2, column 1, line 63 - column 2, line 30, column 4, line 20 - column 5, line 59, column 6, line 57- column 7, line 32 ;

determining from the digital transmission, a decoding key associated with the potential viewing channel while tuning and decoding a user selected channel (see D2, column 1, line 63 - column 2, line 30, column 3, lines 9-51, column 4, lines 11-19, column 5, line 60-column 6, line 56, figure 1, elements 20,22,24, figure 3);

storing the decoding key in a memory retrievable in the event the potential viewing channel is elected by a user (see D2, column 2, lines 19-30, column 4, lines 11-19, column 5, line 60- column 7, line 32, figures 2,3);

determining if all channels having the potential for viewing have had the respective decoding keys determined and if all channels having the potential for viewing have not had the respective decoding keys determined then continuing to monitor the digital transmission for a new control word (see D2, column 2, lines 19-30, column 4, line 20- column 5, line 13, column 5, line 60 - column 7, line 50, figures 2,3)."

5 INDEPENDENT CLAIM 15

5.1 The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of claim 13 is not new in the sense of Article 33(2) PCT.

The subject-matter defined in Claim 15 differs from the subject-matter of Claim 11 in that control words instead of decoding keys, are determined and stored. It is implicit, however, that the determination and storing of control words is necessary requirement for the determination and storing of decoding keys, as claimed in Claim 11. Therefore, since subject-matter of Claim 11 is known from D2, the subject-matter of Claim 15 is also known from D2.

8 DEPENDENT CLAIMS 2-5,7-10,12-14,16-19.

Dependent claims 2-5,7-10,12-14,16-19 do not contain any subject-matter which

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meets the requirements of the PCT in respect of novelty and/or inventive step (Article 33(2) and (3) PCT).

The subject-matter of Claims 2,7 is also known from D1. See D1, column 4, lines 40-55, column 5, line 1-8, column 7, lines 7-35.

The subject-matter of Claims 3,8 is also known from D1. See D1, column 5, lines 1-8, 17-20, 44-51, column 7, lines 7-35, figure 4, element 426, figure 5.

The subject-matter of Claims 4,5,9,10 is also known from D1. See D1, column 4, lines 40- column 5, line 8, column 5, lines 17-22, column 5, lines 44-51, column 7, lines 7-35, column 8, lines 17-53, figure 7, steps 700-734.

The subject-matter of Claims 12,13,14,16,17,18,19 is also known from D2. See D2, column 3, line 35 - column 4, line 20, column 5, line 60-column 7, line 50, figure 1, elements 22,24, figures 2,3.

1. A receiver comprising:

a tuning and a decoding unit for tuning and decoding a digital transmission to produce control words associated with respective channels included in the digital transmission; and

5 a programmed means, responsive to a user's request to tune and decode a selected channel, for using selected control words to generate a descrambling key for the selected channel to be outputted and descramble digital transport streams associated with the selected channel,

10 the tuning and decoding unit also monitoring a non selected channel to derive control words associated with the non selected channel and storing the control words in a memory, whereby the stored control words are used to decode digital transport streams when the non selected channel is subsequently selected by the user.

15 2. The receiver in claim 1, wherein the non selected channel is periodically monitored for updated control words and the updated control words are stored in the memory.

20 3. The receiver in claim 1, wherein the non selected channel comprises a set of potential viewing channels.

25 4. The receiver in claim 1, wherein the control words are compared, in a program selection mode of operation, to identify a desired digital descrambling key stream.

5. The receiver in claim 1, wherein the control words are retrieved, from the memory, the stored portion of the control words comparing favorably to the descrambling key associated with the desired digital transport stream.

6. A method of video transmission reception comprising:
tuning and decoding a digital transmission to produce descrambling
keys associated with respective channels included in the digital transmission;
determining a descrambling key for a selected channel and
5 descrambling digital transport streams associated with the selected channel in
response to user request to tune and decode the selected channel; and
monitoring a non selected channel to derive descrambling keys
associated with the non selected channel and storing the descrambling keys in
a memory, whereby the stored descrambling keys are used to decode digital
10 transport streams when the non selected channel is subsequently selected by
the user.
7. The method of reception in claim 6, wherein the monitoring step is
performed periodically to determine updated descrambling keys; and further
15 comprising storing updated descrambling keys in the memory.
8. The method of reception in claim 6, wherein the non selected channel
comprises a set of potential viewing channels.
- 20 9. The method of reception in claim 6, further comprising comparing the
descrambling keys in a program selection mode of operation, to identify a
desired digital transport stream.
- 25 10. The method of reception in claim 7, further comprising retrieving the
descrambling keys from the memory, the stored portion of the descrambling
keys comparing favorably to the desired digital transport stream.
11. A method of reception comprising the steps of:
determining a potential viewing channel in a digital transmission;

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determining, from the digital transmission, a decoding key associated with the potential viewing channel while tuning and decoding a user selected channel;

5 storing the decoding key in a memory retrievable in the event the potential viewing channel is selected by a user;

10 determining if all channels having the potential for viewing have had the respective decoding keys determined and if all channels having the potential for viewing have not had the respective decoding keys determined then continuing to monitor the digital transmission for a new control word.

12. The method of reception in claim 11, further comprising the step of retrieving from the memory a descrambling key associated with a newly selected viewing channel.

15 13. The method of reception in claim 12, further comprising the step of utilizing the descrambling key associated with the selected viewing channel to descramble a digital transport stream associated with the newly selected viewing channel.

20 14. The method of reception in claim 11, wherein the determining step comprises periodically determining an updated decoding key as required for a time varying security scheme.

25 15. A method of reception comprising the steps of:
determining a potential viewing channel in a digital transmission;
determining, from the digital transmission, a control word associated with the potential viewing channel while tuning and decoding a user selected channel;
30 storing the control word in a memory retrievable in the event the potential viewing channel is selected by a user;

determining if all channels having the potential for viewing have had the respective control word determined and if all channels having the potential for viewing have not had the respective control word determined then continuing to monitor the digital transmission for a new control word.

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16. The method of reception in claim 15, further comprising the step of generating a descrambling code from the control word, and descrambling a digital transport stream associated a selected channel using the descrambling code.

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17. The method of reception in claim 16, further comprising the step of retrieving from the memory a required control word associated with a newly selected viewing channel.

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18. The method of reception in claim 17, further comprising the step of utilizing the required control word to generate a required descrambling code and using the required descrambling code to process a digital transport stream associated with the newly selected viewing channel.

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19. The method of reception in claim 15, wherein the determining step comprises periodically determining an updated decoding key as required for a time varying security scheme.